US ERA ARCHIVE DOCUMENT

# Recycling and Reusing Hardscapes and Landscape Waste Cost Calculator



This Cost Calculator is designed to help landscaping companies and landscape managers estimate the cost savings associated with recycling and reusing hardscapes and green waste. Green waste includes yard trimmings, leaves, plants, grass and other organic waste. The specific hardscape materials addressed in this tool include: lumber, brick, and concrete and aspalt. The Cost Calculator demonstrates that recycling and reusing hardscapes and landscape waste can offer significant savings compared to disposal, depending on a facility's material needs and proximity to recycling facilities.

Based on the values that you enter in the Inputs tab, the Cost Calculator tab estimates the cost of four scenarios for handling hardscape and landscape waste: (1) reusing all waste possible on-site, then recycling all waste possible, and then disposing of the rest; (2) reusing all waste possible and disposing of the rest; (3) recycling as much of the remaining waste as possible and disposing of the rest; and (4) disposing of all materials. If you are not generating a particular waste during a given time frame, enter "0" in the corresponding cell. Increasing the use of compost over time may offer additional cost savings in terms of reduced fertilizer and/or pesticide use, but the calculator does not consider these potential savings.

In the Cost Data tab, EPA provides national averages of costs associated with recycling and disposing landscape waste. Cost data collected from sources dated before 2006 are adjusted for inflation. If you prefer, you can substitute your own cost data into the green cells. EPA encourages users to change the fuel cost data in cell B26 of the Cost Data tab.

The EHS Benefits tab provides a summary of the environmental, health and safety benefits of recycling and reusing landscape waste.

The Quantified Benefits tab provides estimates of environmental impacts avoided by reusing and recycling waste instead of landfilling waste. Although many benefits are quantified, including lifecycle benefits of avoided virgin material production, and avoided impacts from transportation, data are not available to develop a general estimate of some key benefits associated with recycling and reusing landscape waste, including reducing runoff and nonpoint source pollution and improving soil health. To calculate your GHG emissions from alternative green waste management methods, see EPA's WARM model at: http://epa.gov/climatechange/wycd/waste/calculators/Warm\_home.html

The Environmental Data tab presents data utilized on the environmental impacts associated with the production, use, disposal, and transportation of asphalt, concrete, bricks, and lumber.

Macros need to be enabled for the calculator to work properly. Each time you run the calculator, you should save the file under a different file name to maintain a complete record. The file name will appear at the top of each printed page.

Please direct any questions or comments on this cost calculator to: Jean Schwab, U.S. EPA GreenScapes Program Manager, schwab.jean@epa.gov or 703-308-8669.





In which region are you located?	West	

Green Waste				
How many cubic yards of green waste are generated annually?	60			
What percentage of the volume of green waste is wood > 1" diameter?	25%			
How many cubic yards of compost will you use per year, on average over the next 10 years?	10			
How many cubic yards of mulch will you use per year, on average over the next 10 years?	10			
	Yes -			
Do you own a large chipper ( 6"+) to chip lumber and large branches?				
Do you have access to a local green waste recycling facility?	Yes 💌			
How much does green waste recycling cost per ton (including transportation)?	\$15.00			
How many miles is it to the nearest recycling facility for green waste?	25			
How many miles is it to the nearest landfill?	25			
How many miles does new compost and mulch travel to reach your site?	50			
Lumber		Loss Rate	Feet Usable for Reu	use
How many linear feet of lumber will be removed over the course of the next year?	1000			80
Over the next three years?	3000			240
Over the next six years?	6000			480
Over the next ten years?	10000	20%		800
What percentage of the volume of removed lumber is pressure treated?	0%		•	
How many linear feet of lumber will you need over the next year?	500			
Over the next three years?	1500			
Over the next six years?	3000			
Over the next ten years?	5000			
Over the new terr years.				
Do you have access to a local lumber recycling facility?	Yes 💌			
How much does lumber recycling cost per ton (including transportation)?	\$15.00			
How many miles is it to the nearest lumber recycling facility?	25			
Roughly how many times will you remove lumber in the next year?	1			
In the next three years?	3			
In the next six years?	6			
In the next ten years?	10			
How many miles does new lumber travel to reach your site?	50			
Roughly how many times will you need to order lumber in the next year?	1			
In the next three years?	3			
In the next three years?	<u>3</u>			
In the next six years?	6			
In the next six years? In the next ten years?		Loss Rate	Bricks Usable for R	Reuse
In the next six years? In the next ten years? Brick	6 10	Loss Rate	Bricks Usable for R	
In the next six years? In the next ten years?  Brick How many bricks will be removed over the next year?	6 10 1000	Loss Rate	Bricks Usable for R	900
In the next six years? In the next ten years?  Brick  How many bricks will be removed over the next year?  Over the next three years?	6 10 1000 3000	Loss Rate	Bricks Usable for R	900 2700
In the next six years? In the next ten years?  Brick  How many bricks will be removed over the next year?  Over the next three years?  Over the next six years?	6 10 1000 3000 6000			900 2700 5400
In the next six years? In the next ten years?  Brick  How many bricks will be removed over the next year?  Over the next three years?  Over the next six years?  Over the next ten years?	1000 3000 6000 10000	Loss Rate		900 2700 5400
In the next six years? In the next ten years?  Brick  How many bricks will be removed over the next year?  Over the next three years?  Over the next six years?  Over the next ten years?  How many bricks will you need over the next year?	6 10 1000 3000 6000 10000 500			900 2700 5400
In the next six years? In the next ten years?  Brick  How many bricks will be removed over the next year?  Over the next three years?  Over the next six years?  Over the next ten years?  How many bricks will you need over the next year?  Over the next three years?	6 10 1000 3000 6000 10000 500 1500			900 2700 5400
In the next six years? In the next ten years?  Brick  How many bricks will be removed over the next year?  Over the next three years?  Over the next six years?  Over the next ten years?  How many bricks will you need over the next year?  Over the next three years?  Over the next three years?  Over the next six years?	6 10 1000 3000 6000 10000 500 1500 3000			900 2700 5400
In the next six years? In the next ten years?  Brick  How many bricks will be removed over the next year?  Over the next three years?  Over the next six years?  Over the next ten years?  How many bricks will you need over the next year?  Over the next three years?	6 10 3000 6000 10000 500 1500 3000 5000			900 2700 5400
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In the next six years? In the next ten years?  Brick  How many bricks will be removed over the next year? Over the next three years? Over the next six years? Over the next ten years? How many bricks will you need over the next year? Over the next three years? Over the next three years? Over the next six years? Over the next six years? Over the next ten years? Over the next ten years?	6 10 3000 6000 10000 500 1500 3000 5000 Yes \$15.00 25			900 2700 5400
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In the next six years? In the next ten years?  Brick  How many bricks will be removed over the next year?  Over the next three years?  Over the next six years?  Over the next ten years?  How many bricks will you need over the next year?  Over the next three years?  Over the next three years?  Over the next six years?  Over the next ten years?  Over the next ten years?  Over the next ten years?  Do you have access to a local brick recycling facility?  How much does brick recycling cost per ton (including transportation)?  How many miles is it to the nearest brick recycling facility?  Do you plan on purchasing recycled bricks instead of new bricks for construction projects?  How much do recycled bricks cost (per used brick)?  Roughly how many times will you remove brick in the next year?  In the next three years?  In the next ten years?  How many miles does new brick travel to reach your site?  Roughly how many times will you need to order brick in the next year?  In the next three years?  Over the next three years?  Concrete & Asphalt  How many tons of concrete waste will be generated at your site over the next year?	6 10 1000 3000 6000 10000 500 1500 3000 5000 Yes \$15.00 25 Yes \$0.20 1 3 6 10 50 1 3 6 10 50 1 3 6 10 50 1 3 6			900 2700 5400
In the next six years? In the next ten years?  Brick  How many bricks will be removed over the next year?  Over the next three years?  Over the next six years? Over the next ten years? How many bricks will you need over the next year? Over the next six years? Over the next six years? Over the next three years? Over the next six years? Over the next ten years? Over the next ten years? Over the next ten years?  Do you have access to a local brick recycling facility? How much does brick recycling cost per ton (including transportation)? How many miles is it to the nearest brick recycling facility?  Do you plan on purchasing recycled bricks instead of new bricks for construction projects? How much do recycled bricks cost (per used brick)?  Roughly how many times will you remove brick in the next year? In the next three years? In the next ten years? How many miles does new brick travel to reach your site?  Roughly how many times will you need to order brick in the next year? In the next three years? In the next ten years?	6 10 1000 3000 6000 10000 5000 5000 Yes \$15.00 25 Yes \$0.20 1 3 6 10 50 1 3 6 10			900 2700 5400

Do you own a crusher to crush and reuse concrete and asphalt?	No 🔻				
How many tons of asphalt waste will be generated at your site over the next year?	1				
Over the next three years?					
Over the next six years?	<u>3</u>				
Over the next ten years?	10				
How many tons of crushed surfacing will you need over the next year?	2				
Over the next three years?	6				
Over the next six years?	12				
Over the next ten years?	20				
Do you have access to a local concrete recycling facility?	Yes ▼				
How much does recycling concrete cost per ton (including transportation)?	\$15.00				
How many miles is it to the nearest concrete recycling facility?	25				
Roughly how many times will you remove concrete in the next year?	1				
In the next three years?	3				
In the next six years?	6				
In the next ten years?	10				
How many miles does new concrete travel to reach your site?	50				
Roughly how many times will you need to order concrete in the next year?	1				
In the next three years?	3				
In the next six years?	6				
In the next ten years?	10				
Do you have access to a local asphalt recycling facility?	Yes ▼				
How much does recycling asphalt cost per ton (including transportation)?	\$15.00				
How many miles is it to the nearest asphalt recycling facility?	25				
Roughly how many times will you remove asphalt in the next year?	1				
In the next three years?	3				
In the next six years?	6				
In the next ten years?	10				
How many miles does new asphalt travel to reach your site?	50				
Roughly how many times will you need to order asphalt in the next year?	1				
In the next three years?	3				
In the next six years?	6				
In the next ten years?	10				

## Recycling and Reusing Hardscape and Landscape Waste Cost Calculator



Landfill Remaining Waste	1 year	3 years	6 years	10 years
New Material Cost	•			
Compost	\$0	\$0	\$0	\$0
Mulch	\$0	\$0	\$0	\$0
Lumber	\$0	\$0	\$0	\$0
Brick	\$0	\$0	\$0	\$0
Crushed Surfacing	\$24	\$72	\$143	\$238
Reuse Costs				
Initial Cost of Crusher	N/A	N/A	N/A	N/A
Crushing Labor	N/A	N/A	N/A	N/A
Crusher Maintenance	N/A	N/A	N/A	N/A
Initial Cost of Chipper	\$0	\$0	\$0	\$0
Wood Chipper Maintenance	\$30	\$89	\$177	\$295
Wood Chipping Labor	\$14	\$42	\$84	\$140
Recycling Cost/Disposal Cost				
Green Waste	\$70	\$210	\$420	\$700
Lumber	\$11	\$34	\$68	\$113
Brick	\$17	\$51	\$101	\$169
Asphalt	\$15	\$45	\$90	\$150
Concrete	\$15	\$45	\$90	\$150
Total Cost	\$195	\$586	\$1,173	\$1,955
Average Annual Cost to Date	\$195	\$195	\$195	\$195

\$195.49

Maximum Reuse, Landfill Remaining				
Waste	1 year	3 years	6 years	10 years
New Material Cost				
Compost	\$0	\$0	\$0	\$0
Mulch	\$0	\$0	\$0	\$0
Lumber	\$0	\$0	\$0	\$0
Brick	\$0	\$0	\$0	\$0
Crushed Surfacing	\$24	\$72	\$143	\$238
Reuse Costs				
Initial Cost of Crusher	N/A	N/A	N/A	N/A
Crushing Labor	N/A	N/A	N/A	N/A
Crusher Maintenance	N/A	N/A	N/A	N/A
Initial Cost of Chipper	\$0	\$0	\$0	\$0
Wood Chipper Maintenance	\$30	\$89	\$177	\$295
Wood Chipping Labor	\$14	\$42	\$84	\$140
Disposal Cost				
Green Waste	\$124	\$371	\$741	\$1,235
Lumber	\$20	\$60	\$119	\$199
Brick	\$30	\$89	\$179	\$298
Asphalt	\$26	\$79	\$159	\$265
Concrete	\$26	\$79	\$159	\$265
Total Cost	\$293	\$880	\$1,761	\$2,935
Average Annual Cost to Date	\$293	\$293	\$293	\$293

\$293.46

Recycle All Waste Where Facilities				
Exist	1 year	3 years	6 years	10 years
New Material Cost				
Compost	\$171	\$513	\$1,026	\$1,710
Mulch	\$71	\$214	\$428	\$713
Lumber	\$195	\$585	\$1,170	\$1,950
Brick	\$100	\$300	\$600	\$1,000
Crushed Surfacing	\$24	\$72	\$143	\$238
Recycling Cost/Disposal Cost				
Green Waste	\$180	\$540	\$1,080	\$1,800
Lumber	\$23	\$68	\$135	\$225
Brick	\$34	\$101	\$203	\$338
Asphalt	\$15	\$45	\$90	\$150
Concrete	\$15	\$45	\$90	\$150
Total Cost	\$827	\$2,482	\$4,964	\$8,274
Average Annual Cost to Date	\$827	\$827	\$827	\$827

\$827.39

Landfill All Waste	1 year	3 years	6 years	10 years
New Material Cost				
Compost	\$171	\$513	\$1,026	\$1,710
Mulch	\$71	\$214	\$428	\$713
Lumber	\$195	\$585	\$1,170	\$1,950
Brick	\$100	\$300	\$600	\$1,000
Crushed Surfacing	\$24	\$72	\$143	\$238
Disposal Cost				
Green Waste	\$318	\$953	\$1,906	\$3,176
Lumber	\$40	\$119	\$238	\$397
Brick	\$60	\$179	\$357	\$596
Asphalt	\$26	\$79	\$159	\$265
Concrete	\$26	\$79	\$159	\$265
Total Cost	\$1,031	\$3,093	\$6,186	\$10,310
Average Annual Cost to Date	\$1,031	\$1,031	\$1,031	\$1,031

\$1,030.98

### Recycling and Reusing Hardscape and Landscape Waste Cost Data

GreenScape	S
NULL NO.	

				BGreenScapes			
Disposal Fees	Unit	Cost Estimate	Source and Comment	States			
Northeast			Repa, Edward, Ph.D (2005) NSWMA 2005 Tip Fee Survey.	CT, ME, MA, NH, NY, RI, VT			
Mid-Atlantic			<a href="http://wastec.isproductions.net/webmodules/webarticles/articlefiles/478-">http://wastec.isproductions.net/webmodules/webarticles/articlefiles/478-</a>	DE, MD, NJ, PA, VA, WV			
South		\$34.07	Tipping%20Fee%20Bulletin%202005.pdf>	AL, FL, GA, KY, MS, NC, SC, TN			
Midwest		\$38.46	If you know your own disposal cost per ton, change the green cell to the left for your	IN, IA, MI, MN, MO, OH, WI			
South-Central		\$26.47	region.	AZ, AR, LA, NM, OK, TX			
West-Central		\$41.51		CO, KS, MT, NE, ND, SD, UT, WY			
West	\$/Ton	\$37.72		CA, HI, ID, NV, OR, WA			
On-site Asphalt and Concrete							
Crushing Costs	Units	Cost Estimate	Sources	Comments			
			Concrete/Asphalt Crushers. September, 2003.				
Capital Cost	N/A	\$64.350	<a href="http://p2library.nfesc.navy.mil/P2_Opportunity_Handbook/7_III_6.html">http://p2library.nfesc.navy.mil/P2_Opportunity_Handbook/7_III_6.html</a>				
		40.,000					
			Concrete/Asphalt Crushers. September, 2003.				
Labor Cost	\$/Ton	¢7.02	<pre><http: 7_iii_6.html="" p2_opportunity_handbook="" p2library.nfesc.navy.mil=""></http:></pre>				
Equipment Maintenance Cost	\$/Ton		Concrete/Asphalt Crushers. September, 2003.				
Equipment Maintenance Cost	φ/1011	\$0.59	Outoratornophait Ordonals. September, 2003.	1			
One of Wests Oci. II. O.	Harita.	Cont Entire 1	Commen	Comments			
Green Waste Grinding Costs	Units	Cost Estimate	Sources	Comments			
Labor cost of green waste			Mulch Mule Brochure. Accessed August 28, 2007.	This brochure says that the industry average			
chipping/shredding	\$/Hour	\$26.00	<a href="http://www.mulchmule.com/files/10730Literature.pdf">http://www.mulchmule.com/files/10730Literature.pdf</a>	for mulching-related labor is \$25/hour.			
				Bear Cat estimated that a 6" chipper can chip			
Time to shred/chip	Hours/CY	0.05	Personal Communication with Customer Service, BearCat. August 29, 2007	100 feet per minute. 100 feet was multiplied by			
Maintenance of Commercial							
Chipper	\$/Hour Used	\$54.96		See Total Below			
Initial Cost of 6" Commercial	N/A		Norwalk Power Equipment Company. Bear Cat Commercial Chippers (Gravity Feed) 6"	The Bear Cat 71620 sells for \$7,999.			
Amount Saved by Mulching	\$/CY	\$2.78	This value is calculated by subtracting the total cost of producing a CY of mulch from the	This is the amount saved by mulching on-site			
Chipper Maintenance	Cost	Replacement Time	Cost Per Hour Source	Comments			
				\$248 is the retail price for the blade			
Blades	\$266	10	\$26.62 Customer service at Bear Cat provided estimates regarding how often	replacement kit			
Diades	Ψ200	10	each of these maintenance elements would be needed, as well as	<u> </u>			
			how much it would cost to replace all the blades and bearings. This	The average price of gasoline in the United			
			information was given on August 20, 2007	States was multiplied by the volume of the			
Fuel	\$27.13	1	\$27.13	chipper's gas tank.			
			The average price of fuel, \$4.11 per gallon, was taken from the				
			Energy Information Administration's U.S. Retail Gas Prices. Accessed				
1			July 18, 2008.	Each bearing costs \$29 and the chipper			
Bearings	\$60	50	\$1.21 shttp://www.eia.doe.gov/oil_gas/petroleum/data_publications/wrgp/mc	contains two bearings.			
	\$00	00	<παρ://www.eia.doe.gov/oii_gas/petroleum/data_publications/wrgp/mc				
			gas_home_page.html>. To update the calculator for changing fuel				
			prices, go to the that website, find the current price of fuel, multiply				
Total	N/A	N/A	\$54.96 that value by 6.6, and enter the result into cell B26.				
New Material Costs	Units	Cost Estimate	Sources	Comments			
			Alexander, Ron, Tyler, Rod, and Goldstein, Nora. "Increasing Dollar Value for Compost				
Compost	\$/Cu. Yard	\$17.10	Products." <u>Biocycle.</u> Oct. 2004 <a href="http://www.environmental-">http://www.environmental-</a>				
				Orange County landfill sells yard waste mulch			
			Earth Products. Orange County Landfill Orange County, NC. Accessed December 29,	for \$20 per 3 cubic yards. This price was			
Mulch	\$/Cu. Yard	\$7.13	2006. <a href="http://www.co.orange.nc.us/recycling/earthproducts.asp">2006. <a 6"="" boards)<="" decking="" href="http://www.co.orange.nc.us/recycling/earthp&lt;/td&gt;&lt;td&gt;divided by three to find the price per cubic yard.&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;The seven price estimates divided by their&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;1&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;Lumber and Plywood Estimating Price Guide. Ace Hardware. January 30, 2006.&lt;/td&gt;&lt;td&gt;corresponding linear feet are all at or very close&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Lumber (2" td="" x=""><td>\$/LF</td><td>\$0.39</td><td><a href="http://www.acehardware.net/estimate/">http://www.acehardware.net/estimate/&gt;.</a></td><td>to \$0.36 per LF.</td></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a>	\$/LF	\$0.39	<a href="http://www.acehardware.net/estimate/">http://www.acehardware.net/estimate/&gt;.</a>	to \$0.36 per LF.

Brick	\$/Brick	Liu, Henry; Williams, Burkett and Haynes, Kirk. Improving Freezing and Thawing	This website states that ordinary bricks cost between \$300-\$400 per thousand. This range was averaged to \$350 per thousand or \$0.35 per brick.
Crushed Surfacing	\$/Ton	Dayton, Kevin J., State Construction Engineer, WSDOT Headquarters Construction Office. Construction Update. August 8, 2006. p. 1. <a href="http://www.wsdot.wa.gov/biz/Construction/CostIndex/CostIndexPdf/constructionupdatereport.pdf">http://www.wsdot.wa.gov/biz/Construction/CostIndex/CostIndexPdf/constructionupdatereport.pdf</a>	

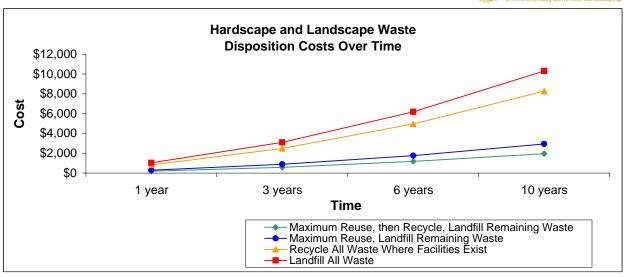
Conversion Factors	From	То	Factor	Source	Comments
				Table 4. Accessed on November 4, 2006.	This value was given in pounds and converted
Brick	Bricks	Tons	0.00225	<a href="http://ntl.bts.gov/DOCS/tables2.html">http://ntl.bts.gov/DOCS/tables2.html</a> .	to tons by dividing by 2000.
Concrete, Asphalt & Brick	Tons	Cu. Yards	0.83	http://www.buckscontainerservices.com/conversions.htm	
Green House Gas	Carbon	CO₂	3.6667	US EPA - Non-CO2 Gases and Carbon Sequestration - Conversion Units. http://www.epa.gov/nonco2/units.html. Accessed October 30, 2007.	
2"x 6" Wood Decking Boards	Cubic Meters	mbf (1000 Board Feet)		Milota, M.; West, C.; and Hartley, I. Gate-to-Gate Life-Cycle Inventory of Softwood Lumber Production. Wood and Fiber Science, December 2005, v. 37.	
2"x 6" Wood Decking Boards	Linear Feet	Tons	0,0015	Lumber Weight Calculator. Accessed November 4, 2006. <a href="http://www.csgnetwork.com/lumberweight.html">http://www.csgnetwork.com/lumberweight.html</a> .	This value was derived by using a lumber weight calculator. Pine was chosen to convert linear feet to tons because it is commonly used in decking. If you are using heavier wood(s), you may want to replace this conversion factor.
2"x 6" Wood Decking Boards	Linear Feet	Cubic Yards	0.0031		One linear foot of 2"x6" contains .0031 cubic
General	KWh		3.6		one interior to the Law Contains 10001 casts
General	MJ		947.8		
General	Kilograms		2,2046		
General	Metric Tons		1.1023		
General	Ounces	Grams	28.3495		
GHG	MTCO <sub>2</sub> E	MTCE	0.2727		
Water	Gallons	Kilograms	3.79		
Yard Waste	Cu. Yards		0.2	General Permit for Yard Waste Composting Facilities Under the South Dakota Waste Management Program. Board of Minerals and Environment. Department of Environment and Natural Resources. October 13, 1998. p. 6. <a href="http://www.state.sd.us/DENR/DES/WasteMgn/SWaste/COMPGEN.pdf">http://www.state.sd.us/DENR/DES/WasteMgn/SWaste/COMPGEN.pdf</a> .	This value was given in pounds and converted to tons by dividing by 2000.
Yard Waste to Compost	Cu. Yards	Cu. Yards	0.375	Wilson, C.R. and Feucht, J.R. Composting of Yard Waste. Colorado State University Coopertive Extension. October, 1997. <a href="http://www.ext.colostate.edu/PUBS/GARDEN/07212.pdf">http://www.ext.colostate.edu/PUBS/GARDEN/07212.pdf</a> .	The article states that 50-75% of plant volume is reduced by composting. This range was averaged to derive a conversion factor.

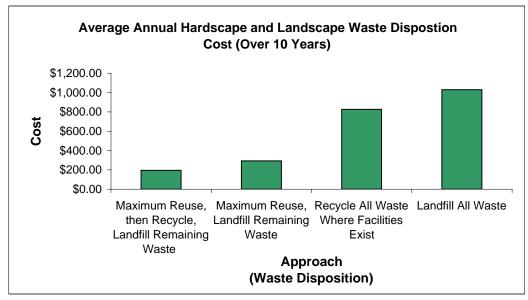
Inflation Adjustment Table	
One Dollar in	Equals this many 2008 Dollars
2003	\$1.17
2004	\$1.14
2005	\$1.10
2006	\$1.07
2007	\$1.04

Source: CPI Inflation Calculator. <a href="http://data.bls.gov/cgi-bin/cpicalc.pl">http://data.bls.gov/cgi-bin/cpicalc.pl</a>

## Recycling and Reusing Hardscape and Landscape Waste Cost Graph







Recycling and Reusing Hardscape and Landscape Waste Environmental, Health and Safety Benefits

**Reduces waste/demand for landfill space** because materials that would otherwise be disposed of are reused or recycled.

Reuses waste materials because hardscape and landscape waste is being reused directly on-site.

**Reduces air pollution or improves air quality** because reusing materials on-site results in fewer pollutants emitted from transporting waste materials, and methane emissions from landfills are reduced from both reuse and recycling.

**Conserves fossil fuels** because energy needed to transport both hardscape and landscape wastes, as well as new materials, will be reduced. Also, compost can reduce the need for chemical fertilizers, the production of which is fossil fuel intensive.

Conserves timber because reused and recycled lumber reduces demand for virgin lumber.

In addition to the above benefits, the following benefits are associated with maximizing compost use and minimizing use of fertilizers and pesticides:

**Conserves water** because compost can improve the water retention of the soil, reducing the need for irrigation.

Reduces human exposure to hazardous materials or substances because compost can reduce the need for pesticides and herbicides and the associated human exposures.

**Reduces runoff and nonpoint source pollution** because compost can substitute for pesticides and fertilizers, which can produce polluted runoff.

Improves groundwater recharge because compost increases the soil's ability to retain water.

Improves soil quality and retards erosion because using compost improves soil quality.



Green Waste Quantity Reused (lbs.)	e, Landfill Rem	aining Wast	•	
	1 year	3 years 44,000	6 years	10 years
additity (todoca (ibb.)	14,667		88,000	146,667
Quantity Recycled (lbs.)	9,333	28,000	56,000	93,333
Quantity Landfilled (lbs.)	0	0	0	(
Lumber	1 year	3 years	6 years	10 years
Quantity Reused (lbs.)	1,500	4,500	9,000	15,000
Quantity Recycled (lbs.)	1,500	4,500	9,000	15,000
Quantity Landfilled (lbs.)	0	0	0	(
Environmental Benefit				
Energy Conserved (MJ)	3,586	10,757	21,514	35,85
GHG Avoided (lbs. Of CO2				
Equivalent)	8 414	25 243	50 486	84.143
CO Avoided (grams)	1,758	5,274	10,549	17,582
VOC Ausided (grams)	308	923	1,846	3,07
VOC Avoided (grams) NO <sub>x</sub> Avoided (grams)	2.389	7,167	14 334	23,89
SO <sub>2</sub> Avoided (grams)	621	1.862	3,724	6,20
DM A wided (grants)	97	292	584	
PM Avoided (grams)				973
Brick	1 year	3 years	6 years	10 years
Quantity Reused (lbs.)	2,250	6,750	13,500	22,50
Quantity Recycled (lbs.)	2,250	6,750	13,500	22,50
Quantity Landfilled (lbs.)	0	0	0	-
Environmental Benefit				
Water Conserved (ga.)	95	284	567	945
Energy Conserved (MJ)	4,739	14,216	28,431	47,385
GHG Avoided (lbs. Of CO2	4,138	14,210	20,401	41,30
	4 200	2 020	7.670	40.70
Equivalent)	1,280	3,839	7,678	12,79
CO Avoided (grams)	535	1,605	3,210	5,35
VOC Avoided (grams)	127	382	765	1,27
NO <sub>x</sub> Avoided (grams)	2,598	7,795	15,590	25,98
SO <sub>2</sub> Avoided (grams)	4,523	13,569	27,138	45,23
PM Avoided (grams)	3,222	9,667	19,333	32,22
Concrete	1 year	3 years	6 years	10 years
Quantity Reused (lbs.)	0	0	0	- (
Quantity Recycled (lbs.)	2,000	6,000	12,000	20,000
	2,000	0,000	0	20,000
Quantity Landfilled (lbs.) Environmental Benefit	U	U	U	,
Water Conserved (ga.)	113	340	679	1,132
Energy Conserved (MJ)	65	196	392	653
RCRA Hazardous Waste				
Avoided (grams)	0	0	0	
GHG Avoided (lbs. Of CO2				
Equivalent)	22	66	132	220
CO Avoided (grams)	11	32	63	10
VOC Aunided (grame)	0	0	0	
VOC Avoided (grams) NO <sub>x</sub> Avoided (grams)	25	75	150	250
SO <sub>2</sub> Avoided (grams)	20	66	133	22
302 Avoided (grains)	22		111	11
PM Avoided (grams)		5		- 11
Asphalt	1 year	3 years	6 years	10 years
Quantity Reused (lbs.)	0	0	0	(
Quantity Recycled (lbs.)	2,000	6,000	12,000	20,00
Quantity Landfilled (lbs.)	0	0		
Quantity Landfilled (lbs.)		U	0	
Environmental Benefit		U	0	
Environmental Benefit	113	340	679	(
Environmental Benefit Water Conserved (ga.)	113	340	679	1,133
Environmental Benefit Water Conserved (ga.) Energy Conserved (MJ)				1,133
Environmental Benefit Water Conserved (ga.) Energy Conserved (MJ) RCRA Hazardous Waste	113 65	340 196	679 392	1,133
Environmental Benefit Water Conserved (ga.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams)	113	340	679	1,133
Environmental Benefit Water Conserved (ga.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams) GHG Avoided (libs. Of CO2	113 65	340 196 0	679 392 0	1,133
Environmental Benefit Water Conserved (ga.) Energy Conserved (MU) RCRA Hazardous Waste Avoided (grams) GHG Avoided (libs. Of CO2 Equivalent)	113 65 0	340 196 0	679 392 0	1,133 653 (
Environmental Benefit Water Conserved (ga.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams) GHG Avoided (bs. Of CO2 Equivalent) CO Avoided (orams)	113 65 0	340 196 0 66 32	679 392 0 132 63	1,133 653 ( 221
Environmental Benefil Water Conserved (ga.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams) GHG Avoided (bs. Of CO2 Equivalent) CO Avoided (grams) VOC Avoided (grams)	113 65 0 22 11	340 196 0 66 32	679 392 0 132 63	1,133 655 ( 220 103
Environmental Benefil Water Conserved (ga.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams) GHG Avoided (ibs. Of CO2 Equivalent) CO Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) VO, Avoided (grams)	113 65 0 22 11 0 25	340 196 0 66 32 0 75	679 392 0 132 63 0	1,133 655 ( 220 103 ( 256
Environmental Benefil Water Conserved (ga.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams) GHG Avoided (ibs. Of CO2 Equivalent) CO Avoided (grams) VOC Avoided (grams) VO, Avoided (grams) VO, Avoided (grams)	113 65 0 22 11	340 196 0 66 32	679 392 0 132 63	1,133 655 ( 220 103 ( 256
Environmental Benefil Water Conserved (ga.) Energy Conserved (MJ) RCFA Hazardous Waste Avoided (grams) GHG Avoided (fbs. Of CO2 Equivalent) CO Avoided (grams) VOC Avoided (grams) NOC, Avoided (grams) NOC, Avoided (grams)	113 65 0 22 11 0 25	340 196 0 66 32 0 75	679 392 0 132 63 0	1,133 653 ( 224 109 ( 256 225
Environmental Benefil Water Conserved (ga.) Energy Conserved (MJ) RCFA Hazardous Waste Avoided (grams) GHG Avoided (fbs. Of CO2 Equivalent) CO Avoided (grams) VOC Avoided (grams) NOC, Avoided (grams) NOC, Avoided (grams)	113 65 0 22 11 0 25 22	340 196 0 66 32 0 75 66	679 392 0 132 63 0 150	1,133 653 ( 224 109 ( 256 225
Environmental Benefil Water Conserved (ga.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams) GHG Avoided (fbs. Of CO2 Equivalent) CO Avoided (grams) NO, Avoided (grams) NO, Avoided (grams) SO <sub>2</sub> Avoided (grams)	113 65 0 22 11 0 25 22	340 196 0 66 32 0 75 66	679 392 0 132 63 0 150	1,133 653 ( 224 103 ( 225 227 18
Environmental Benefit Water Conserved (ga.) Energy Conserved (M.) RCRA Hazardous Waste Avoided (grams) GHG Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) SO, Avoided (grams) SO, Avoided (grams) PM Avoided (grams) PM Avoided (grams)	113 65 0 22 11 0 25 22 2	340 196 0 66 32 0 75 66 5	679 392 0 132 63 0 150 133 11	1,133 653 (0 224 103 (1 225 227 18
Environmental Benefit Water Conserved (px) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams) GRIG Avoided (grams) GO Avoided (grams) NO, Avoided (grams) NO, Avoided (grams) PM Avoided (grams) PM Avoided (grams) Total Environment Waste Reused (bx)	113 65 0 22 11 0 25 22 2 1 year 18,417	340 196 0 66 32 0 75 66 5	679 392 0 132 63 0 150 133 11	1,133 653 (0 221 103 (1 251 222 11 10 years 184,163
Environmental Benefit Water Conserved (pa.) Energy Conserved (M.) RCRA Hazardous Waste Avoided (grams) GRIG Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) SO <sub>2</sub> Avoided (grams) PM Avoided (grams) Total Eny Benefit Waste Reused (lbs.) Waste Reused (lbs.)	113 65 0 22 11 0 25 22 2 2 1 year 18,417	340 196 0 66 32 0 75 66 5 3 years 55,250 51,250	679 392 0 132 63 0 150 133 11 6 years 110,500	1,133 653 ( 221 103 ( 251 222 18 10 years 184,16 170,833
Environmental Benefit Water Conserved (pa.) Energy Conserved (MJ) RRCR4 Hazardous Waste Avoided (grams) GRIG Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) FM Avoided (grams) FM Avoided (grams) FM Avoided (grams) Water Resument Water Resument Waste Res	113 65 0 22 111 0 25 22 2 2 2 1 year 18,417 17,083	340 196 0 66 32 0 75 66 5 3 years 55,250 51,250	679 392 0 132 63 0 150 133 11 6 years 110,500 102,500	1,133 653 (0 22(1 10) (0 255 222 10 10 10 10 10 10 10 10 10 10 10 10 10
Environmental Benefit Water Conserved (ga.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams) GHG Avoided (grams) GHG Avoided (grams) VOC Avoided (grams) NO, Avoided (grams) PM Avoided (grams) PM Avoided (grams) Water Researd (grams) Water Researd (grams) Water Researd (grams) Waster Researd (grams)	113 65 0 22 11 0 25 22 2 2 2 1 year 17,083 0 35,500	340 196 0 66 32 0 75 66 5 3 years 55,250 51,250 0	679 392 0 132 63 0 150 133 11 6 years 110,500 0 213,000	1,133 655 ( 221 103 ( 255 25 11 10 years 184,16 170,83
Environmental Benefit Water Conserved (ga.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams) GHG Avoided (grams) GHG Avoided (grams) VOC Avoided (grams) NO, Avoided (grams) PM Avoided (grams) PM Avoided (grams) Water Researd (grams) Water Researd (grams) Water Researd (grams) Waster Researd (grams)	113 65 0 22 111 0 25 22 2 2 2 1 year 18,417 17,083	340 196 0 66 32 0 75 66 5 3 years 55,250 51,250	679 392 0 132 63 0 150 133 11 6 years 110,500 102,500	1,133 655 ( 221 103 ( 255 25 11 10 years 184,16 170,83
Environmental Benefit Water Conserved (pk) Energy Conserved (MJ) RRCR4 Hazardous Waste Avoided (grams) GGMG Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) FM Avoided (grams) FM Avoided (grams) Water Benefit Waste Reused (bs.) Waste Reused (bs.) Waste Recycled (lbs.) Waste Recycled (lbs.) Total Recycled or Reuse Energy Use (MK) Energy Energy Energy Energy Energy Energy Energy Energy Ener	113 65 0 22 11 0 25 22 2 2 2 1 year 17,083 0 35,500	340 196 0 66 32 0 75 66 5 3 years 55,250 51,250 0	679 392 0 132 63 0 150 133 11 6 years 110,500 0 213,000	1,133 655 ( 221 103 ( 255 25 11 10 years 184,16 170,83
Environmental Benefit Water Conserved (BA) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams) GRIG Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) SO <sub>2</sub> Avoided (grams) PM Avoided (grams) May Avoided (grams) Total Envy Benefit Waste Revyeld (Ibs.) Waste Landfilled (Ibs.) Total Revyled of Reusec Energy Use (MJ) Avoided Al Emissions	113 65 0 22 11 0 25 22 2 2 2 1 year 17,083 0 35,500	340 196 0 66 32 0 75 66 5 3 years 55,250 51,250 0	679 392 0 132 63 0 150 133 11 6 years 110,500 0 213,000	1,133 655 ( 221 103 ( 255 25 11 10 years 184,16 170,83
Environmental Benefit Water Conserved (pk) Energy Conserved (MJ) RRCR4 Hazardous Waste Avoided (grams) GGG Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) FM Environment FM Environ	113 65 0 22 111 0 25 22 2 1 1988 1 1988 1 1988 1 3 455	340 196 0 66 32 0 75 66 5 5 55,250 51,250 0 106,500 25,364	679 392 0 132 63 0 150 133 11 11 6 years 1102,500 0 213,000 50,729	1,133 653 (0 224 100 (0 225 18 10 yearn 184,16 170,83 355,000 84,541
Environmental Benefit Water Conserved (gs.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grams) Geric Avoided (grams) COC Avoided (grams) VOC Avoided (grams) NO, Avoided (grams) PM Avoided (grams) PM Avoided (grams) Waste Reused (bs.) Vaste Revolted (lb.) Total Env Standard (grams) Total Revolted (grams) Total Revolted (grams) Geric Avoided (grams) Geric Revolted (grams)	113 65 0 22 111 0 25 22 2 2 2 18,417 17,083 35,500 8,455	340 196 66 32 0 75 66 5 5 55,250 0 106,500 25,364	679 392 0 132 63 0 150 153 133 111 6 years 110,500 102,500 0 213,000 50,729	1,133 653 653 109 109 109 119 110 years 110 years 170,833 (355,000 84,544
Environmental Benefit Water Conserved (pa.) Energy Conserved (MJ) RRCR4 Hazardous Waste Avoided (grams) GGA Voided (grams) VOC Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) FM Avoided (Bo.) Waste Recycled (Ibs.) Waste Recycled (Ibs.) Waste Recycled (Ibs.) Waste Recycled (Ibs.) GGA GRAMS FM Avoided (Ibs.) FOIT (GRAMS)	113 65 0 22 111 0 0 25 22 2 2 2 1 year 18,417 17,083 0 8,455	340 196 0 66 32 0 75 66 5 55,250 0 106,500 25,364	679 392 0 132 63 0 150 150 110,500 102,500 213,000 50,729	1,133 653 (0 224 100 (0 255 22 11 10 years 184,16 170,83 355,000 84,544
Environmental Benefit Water Conserved (gs.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grame) General Conserved (MJ) RCRA Hazardous Waste Avoided (grame) For Conserved (MJ) RCRA Hazardous Waste Rounded (grame) NO, Avoided (grame) PM Avoided (grame) PM Avoided (grame) PM Avoided (grame) PM Avoided (grame) Waste Recycled (lbs.) Waste Recycled (lbs.) Waste Recycled (lbs.) Waste Racycled (lbs.) General Conserved (lbs.) Rounded (grame) For Conserved (lbs.) General Conserved (lbs.) General Conserved (lbs.) General Conserved (lbs.) CO Avoided (grame) CO Avoided (grame) VOC Avoided (grame) VOC Avoided (grame)	113 65 0 22 111 0 25 22 2 2 2 18,417 17,083 35,500 8,455	340 196 66 32 0 75 66 5 5 55,250 0 106,500 25,364	679 392 0 132 63 0 150 153 133 111 6 years 110,500 102,500 0 213,000 50,729	1,133 653 (0 224 100 (0 255 22 11 10 years 184,16 170,83 355,000 84,544
Environmental Benefit Water Conserved (gs.) Energy Conserved (MJ) RCRA Hazardous Waste Avoided (grame) General Conserved (MJ) RCRA Hazardous Waste Avoided (grame) For Conserved (MJ) RCRA Hazardous Waste Rounded (grame) NO, Avoided (grame) PM Avoided (grame) PM Avoided (grame) PM Avoided (grame) PM Avoided (grame) Waste Recycled (lbs.) Waste Recycled (lbs.) Waste Recycled (lbs.) Waste Racycled (lbs.) General Conserved (lbs.) Rounded (grame) For Conserved (lbs.) General Conserved (lbs.) General Conserved (lbs.) General Conserved (lbs.) CO Avoided (grame) CO Avoided (grame) VOC Avoided (grame) VOC Avoided (grame)	113 65 0 22 111 0 0 25 22 2 2 2 1 year 18,417 17,083 0 8,455	340 196 0 66 32 0 75 66 5 55,250 0 106,500 25,364	679 392 0 132 63 0 150 150 110,500 102,500 213,000 50,729	1,133 653 (0 221 109 (1 255 22 11 10 years 170,833 (1 355,000 84,541 97,38 23,143 4,355
Environmental Benefit Water Conserved (pa.) Energy Conserved (MJ) RRCR4 Hazardous Waste Avoided (grams) GGA Voided (grams) VOC Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) FM Avoided (Bo.) Waste Recycled (Ibs.) Waste Recycled (Ibs.) Waste Recycled (Ibs.) Waste Recycled (Ibs.) GGA GRAMS FM Avoided (Ibs.) FOIT (GRAMS)	113 65 0 22 111 0 25 22 2 2 2 1 year 1 year 1 year 13,500 8,455	340 196 0 66 32 0 75 5 66 5 5,250 0 106,500 25,364 29,214 6,943 1,305	679 392 0 132 63 0 150 150 133 11 11 10.500 102.500 50,729	(

	naining Waste 1 year	3 years	6 years	10 years
Green Waste Quantity Reused (lbs.)	14,667	44,000	88,000	146,66
Quantity Recycled (lbs.)	0	0	0	- (
Quantity Landfilled (lbs.)	9,333	28,000	56,000	93,333
Quantity Reused (lbs.)	1,500	3 years 4,500	9,000	15,00
Quantity Recycled (lbs.)	0	0	0,000	10,00
Quantity Landfilled (lbs.)	1,500	4,500	9,000	15,00
Environmental Benefit				
Energy Conserved (MJ)	1,799	5,398	10,796	17,99
GHG Avoided (lbs. Of CO2 Equivalent)	4,363	13,090	26,180	43,63
CO Avoided (grams)	1,757	5,272	10,544	17,57
VOC Avoided (grams)	307	921	1.843	3.07
NO <sub>x</sub> Avoided (grams)	2,386	7,157	14,313	23,85
SO <sub>2</sub> Avoided (grams)	620 90	1,861 271	3,721 542	6,20
PM Avoided (grams) Brick	1 year	3 years	6 years	90: 10 year:
Quantity Reused (lbs.)	2,250	6,750	13,500	22,50
Quantity Recycled (lbs.)	0	0	0	- (
Quantity Landfilled (lbs.)	2,250	6,750	13,500	22,50
Environmental Benefit	47			
Water Conserved (ga.) Energy Conserved (MJ)	2,369	7,108	284 14,216	23,69
GHG Avoided (lbs. Of CO2	2,303	7,100	14,210	25,05
Equivalent)	779	2,338	4,675	7,79
CO Avoided (grams)	484	1,453	2,907	4,84
VOC Avoided (grams) NO <sub>x</sub> Avoided (grams)	102 2 226	305 6,678	609 13,356	1,010
SO <sub>2</sub> Avoided (grams)	2,275	6,826	13,651	22,26
PM Avoided (grams)	1,636	4,908	9.816	16,36
Concrete	1 year	3 years	6 years	10 years
Quantity Reused (lbs.)	0	0	0	
Quantity Recycled (lbs.) Quantity Landfilled (lbs.)	2 000	6,000	12 000	20,00
Environmental Benefit	2,000	6,000	12,000	20,00
Water Conserved (ga.)	0	0	0	
Energy Conserved (MJ)	0	0	0	-
RCRA Hazardous Waste				
Avoided (grams) GHG Avoided (lbs. Of CO2	0	0	0	
Equivalent)	0	0	0	
CO Avoided (grams)	0	0	0	
VOC Avoided (grams)	0	0	0	-
NO <sub>x</sub> Avoided (grams)	0	0	0	-
SO <sub>2</sub> Avoided (grams)	0	0	0	
PM Avoided (grams) Asphalt	1 year	3 years	6 years	10 years
Quantity Reused (lbs.)	0	0	0	10 year
Quantity Recycled (lbs.)	0	0	0	- (
Quantity Landfilled (lbs.)	2,000	6,000	12,000	20,00
Environmental Benefit Water Conserved (ga.)	0	0	0	
Energy Conserved (MJ)	0		0	
		0	0	_
RCRA Hazardous Waste	U	0	0	(
RCRA Hazardous Waste Avoided (grams)	0	0	0	
RCRA Hazardous Waste Avoided (grams) GHG Avoided (lbs. Of CO2	0	0	0	(
RCRA Hazardous Waste Avoided (grams) GHG Avoided (lbs. Of CO2 Equivalent)	0	0	0	(
RCRA Hazardous Waste Avoided (grams) GHG Avoided (lbs. Of CO2 Equivalent) CO Avoided (grams)	0	0	0 0	(
RCRA Hazardous Waste Avoided (grams) GHG Avoided (lbs. Of CO2 Equivalent) CO Avoided (grams) VOC Avoided (grams)	0	0	0	(
RCRA Hazardous Waste Avoided (grams) GHG Avoided (lbs. Of CO2 Equivalent) CO Avoided (grams) VOC Avoided (grams)	0 0 0 0	0 0 0	0 0 0	(
RCRA Hazardous Waste Avoided (grams) GHG Avoided (ibs. Of CO2 Equivalent) CO Avoided (grams) VOC Avoided (grams) NO, Avoided (grams) SO <sub>2</sub> Avoided (grams)	0 0 0 0	0 0 0 0	0 0 0 0	(
RCRA Hazardous Waste Avoided (grams) GHG Avoided (ibs. Of CO2 Equivalent) CO Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) SO <sub>2</sub> Avoided (grams) PM Avoided (grams)	0 0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	(
RCRA Hazardous Waste Avoided (grams) GHG Avoided (this. Of CO2 Equivalent) CO Avoided (grams) NO, Avoided (grams) NO, Avoided (grams) SO <sub>2</sub> Avoided (grams) PM Avoided (grams) Total Env Benefit	0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	10 years
RCRA Hazardous Waste Avoided (grams) GHG Avoided (griss) GHG Avoided (griss) CO Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) SO2, Avoided (grams) PM Avoided (grams) Total Env Benefit Waste Reused (lbs.)	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	10 years
RCRA Hazardous Waste Avoided (grams) GHG Avoided (grams) CO Avoided (grams) VOC Avoided (grams) VOC Avoided (grams) SO <sub>2</sub> Avoided (grams) PM Avoided (grams) PM Avoided (grams) Total Env Baneft Waste Reused (lbs.)	0 0 0 0 0 0 0 0 0 1 year 18,417	0 0 0 0 0 0 0 0 0 3 years 55,250 0	0 0 0 0 0 0 0 0 0	10 year:
RCRA Hazardous Waste Avoided (grams) GHG Avoided (fibs. Of CO2 Equivalent) CO Avoided (grams) VOG Avoided (grams) VOG Avoided (grams) FM Avoided (grams) FM Avoided (grams) FM Avoided (grams) Waste Reused (bs.) Waste Landfilled (fibs.) Waste Landfilled (fibs.) Waste Landfilled (fibs.)	0 0 0 0 0 0 0 0 1 year 18,417 0 17,083	0 0 0 0 0 0 0 0 0 3 years 55,250 0 51,250 55,250	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 years 184,16 170,83:
RCRA Hazardous Waste Avoided (grams) GHG Avoided (bis. Of CO2 Equivalent) CO Avoided (grams) NO, Avoided (grams) NO, Avoided (grams) NO, Avoided (grams) PM Avoided (grams) PM Avoided (grams) Waste Roused (bis.) Waste Roused (bis.) Waste Roycled (bis.) Total Roycled (bis.) Total Roycled or Rouse Energy Lise (MJ) Total Roycled or Rouse Energy Lise (MJ)	0 0 0 0 0 0 0 0 1 year 18,417 0 17,083	0 0 0 0 0 0 0 0 0 3 years 55,250 0	0 0 0 0 0 0 0 0 0 0 110,500	10 years
RCRA Hazardous Waste Avoided (grams) GHG Avoided (bb. Of CO2 Equivalent) CO2 Avoided (grams) CO2 Avoided (grams) FO3 Avoided (grams) FO4 Avoided (grams) Waste Roused (bb.) Waste Landfilled (bb.) Waste Landfilled (bb.) Waste Landfilled (bb.) FO4 Royalded of Russet Energy Use (MJ) Avoided Air Emissions	0 0 0 0 0 0 0 0 1 year 18,417 0 17,083	0 0 0 0 0 0 0 0 0 3 years 55,250 0 51,250 55,250	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 years 184,16 170,83:
RCRA Hazardous Waste Avoided (grams) GHG Avoided (bis. Of CO2 Equivalent) CO Avoided (grams) NO, Avoided (grams) NO, Avoided (grams) NO, Avoided (grams) PM Avoided (grams) PM Avoided (grams) Total Erns Beenets Waste Reused (bis.) Waste Recycled (bis.) Waste Recycled (bis.) Waste Recycled (bis.) Waste Revised (bis.) Avoided Air Ernissions GHG Avoided (bis.) Col GHG Avoided (bis.) Col GHG Avoided (bis.)	0 0 0 0 0 0 0 0 0 1 year 18,417 0 17,083 18,417 4,169	0 0 0 0 0 0 0 0 0 3 years 55,250 0 51,250 12,506	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 years 184,16° 170,83: 184,16° 41,68:
RCRA Hazardous Waste Avoided (grams) GHG Avoided (the. Of CO2 Equivalent) CO2 Avoided (grams) CO2 Avoided (grams) RCQ, Avoided (grams) RCQ, Avoided (grams) FM Avoided (grams) FM Avoided (grams) Waste Reused (the.) Waste Reused (the.) Waste Reused (the.) Waste Review (Treat Review) Waste Review (Treat Review) Revided Air Emissions GHG Avoided (the. Of Co2 Equivalent) GHG Avoided (the. Of CO2 Equivalent) GHG Avoided (the. Of CO2 Equivalent)	0 0 0 0 0 0 0 0 0 1 year 18,417 0 17,083 18,417 4,169	0 0 0 0 0 0 0 0 0 3 years 55,250 0 51,250 12,506	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 years 184,16 170,833 184,16 41,683
RCRA Hazardous Waste Avoided (grams) GHG Avoided (bis. OT CO2 Equivalent) CO Avoided (fis. m) CO Avoided (grams) CO Avoided (grams) CO Avoided (grams) SO2, Avoided (grams) FM Avoided (grams) FM Avoided (grams) FM Avoided (grams) Waste Roused (bis.) Waste Landfilled (bis.) GEO Avoided (grams) FM Avoided (grams) FM Avoided (grams) FM Avoided (grams) Avoided Av Emissions GHG Avoided (bis.) CO2 Colvoided (grams)	0 0 0 0 0 0 0 0 1 year 18,417 17,083 18,417 4,169	0 0 0 0 0 0 0 0 0 3 years 55,250 0 51,250 55,250 12,506	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 years 184,16 170,83 184,16 41,68 51,42(
RCRA Hazardous Waste Avoided (grams) GHG Avoided (grams) GHG Avoided (bb. Of CO2 Equivalent) CO2 Avoided (grams) CO2 Avoided (grams) RCQ, Avoided (grams) RCQ, Avoided (grams) RPM Avoided (grams) RPM Avoided (grams) RPM Avoided (grams) Resident	0 0 0 0 0 0 0 0 0 1 year 18,417 0 17,083 18,417 4,169	0 0 0 0 0 0 0 0 0 3 years 55,250 0 51,250 12,506	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 years 184,16 170,833 184,16 41,683
RCRA Hazardous Waste Avoided (grams) GHG Avoided (grams) GO Avoided (grams) CO Avoided (grams) TOO Avoided (grams) TOO Avoided (grams) TOO Avoided (grams) PM Avoided (grams) PM Avoided (grams) PM Avoided (grams) PM Avoided (grams) Total Env. Benself. Waste Recycled (bb.) Waste Recycled (bb.) Waste Recycled (bb.) Avoided (grams) Total Recycled or Reuself-Energy Use (MJ) Avoided Air Ermissions (GHG Avoided (grams) CO Avoided (grams) CO Avoided (grams) VOC Avoided (grams)	0 0 0 0 0 0 0 0 18,417 0 17,083 18,417 4,169	0 0 0 0 0 0 0 0 0 3 years 55,250 0 51,250 12,506 15,428 6,725 1,226	0 0 0 0 0 0 0 0 0 0 0 110,500 110,500 110,500 25,011 30,855 13,451 2,452 27,669	10 years 184,16 170,83: 184,16 41,68: 51,42( 22,41) 4,08
RCRA Hazardous Waste Avoided (grams) GHG Avoided (bb. Of CO2 Equivalent) CD Avoided (grams) CD Avoided (grams) CD, Avoided (grams) Waste Roused (bb.) Waste Landfilled (bb.) Waste Landfilled (bb.) Total Rocycled of Russec Energy Use (MJ) Avoided Air Emissions GHG Avoided (grams) CD Avoided (grams) CD Avoided (grams) ND, Avoided (grams) ND, Avoided (grams)	0 0 0 0 0 0 0 0 1 year 18,417 0 17,083 18,417 4,169 5,143 2,242 409 4,612	0 0 0 0 0 0 0 0 0 3 years 55,250 55,250 12,506 15,428 6,725 1,226	0 0 0 0 0 0 0 0 0 0 102,500 110,500 25,011	10 years 184,16 170,83: 184,16 41,68: 51,42(2,41) 4,08: 46,11:
RCRA Hazardous Waste Avoided (grams) GHG Avoided (bbs. Of CO2 Equivalent) CO Avoided (grams) CO Avoided (grams) CO Avoided (grams) MC, Avoided (grams) MC, Avoided (grams) PM Avoided (grams) PM Avoided (grams) Waste Roused (bb.) Waste Landfilled (bb.) Waste Landfilled (bb.) Total Recycled of Russec Energy Use (MJ) Avoided Air Emissons GHG Avoided (grams) CO Avoided (grams) CO Avoided (grams) NO, Avoided (grams) NO, Avoided (grams) NO, Avoided (grams) PM Avoided (grams)	0 0 0 0 0 0 0 0 1 year 18,417 4,1683 18,417 4,1684 5,143 2,242 409 4,612 2,895	0 0 0 0 0 0 0 0 0 55,250 55,250 12,506 15,428 6,725 1,226 13,335 8,686	0 0 0 0 0 0 0 0 0 0 102,500 110,500 25,011 30,855 13,451 2,462 27,662	10 years 184,166 170,83: 184,168: 51,42(22,41) 4,08: 46,11; 28,95:
RCRA Hazardous Waste Avoided (grams) GHG Avoided (grams) GO Avoided (grams) CO Avoided (grams) TOO Avoided (grams) TOO Avoided (grams) TOO Avoided (grams) PM Avoided (grams) PM Avoided (grams) PM Avoided (grams) PM Avoided (grams) Total Env. Benself. Waste Recycled (bb.) Waste Recycled (bb.) Waste Recycled (bb.) Avoided (grams) Total Recycled or Reuself-Energy Use (MJ) Avoided Air Ermissions (GHG Avoided (grams) CO Avoided (grams) CO Avoided (grams) VOC Avoided (grams)	0 0 0 0 0 0 0 0 1 year 18,417 4,1683 18,417 4,1684 5,143 2,242 409 4,612 2,895	0 0 0 0 0 0 0 0 0 55,250 55,250 12,506 15,428 6,725 1,226 13,335 8,686	0 0 0 0 0 0 0 0 0 0 102,500 110,500 25,011 30,855 13,451 2,462 27,662	10 years 184,166 170,83: 184,168: 51,42(22,41) 4,08: 46,11; 28,95:

18,417 17,083 0 35,500 8,455 0 9,738 2,314 435 5,037 5,188 3,323 0 321

Recycle All Waste Where Fac	ilities Exis			
Green Waste	1 year	3 years	6 years	10 years
Quantity Reused (lbs.)	0	0	0	0
Quantity Recycled (lbs.)	24,000	72,000	144,000	240,000
Quantity Landfilled (lbs.)	0	0	0	0
Lumber	1 year	3 years	6 years	10 years
Quantity Reused (lbs.)	0	0	0	0
Quantity Recycled (lbs.)	3,000	9,000	18,000	30,000
Quantity Landfilled (lbs.)	0	0	0	0
Environmental Benefit				
Energy Conserved (MJ)	3,573	10,718	21,436	35,727
GHG Avoided (lbs. Of CO2				
Equivalent)	8,102	24,306	48,612	81,020
CO Avoided (grams)	2	5	9	16
VOC Avoided (grams)	1	4	8	13
NO <sub>x</sub> Avoided (grams)	7	21	42	69
SO <sub>2</sub> Avoided (grams)	1	3	5	8
PM Avoided (grams)	14	42	83	139
Brick	1 year	3 years	6 years	10 years
Quantity Reused (lbs.)	0	0	0	0
Quantity Recycled (lbs.)	4,500	13,500	27,000	45,000
Quantity Landfilled (lbs.)	0	0	0	0
Environmental Benefit				
Water Conserved (ga.)	95	284	567	945
Energy Conserved (MJ)	4,739	14,216	28,431	47,385
GHG Avoided (lbs. Of CO2				
Equivalent)	1,001	3,003	6,006	10,010
CO Avoided (grams)	101	304	608	1.013
VOC Avoided (grams)	52	155	311	518
NO <sub>x</sub> Avoided (grams)	745	2,234	4,469	7,448
SO <sub>2</sub> Avoided (grams)	4,496	13,487	26,973	44,955
PM Avoided (grams)	3,173	9,518	19,035	31,725
Concrete	1 year	3 years	6 years	10 years
Quantity Reused (lbs.)	0	0	0	0
Quantity Recycled (lbs.)	2,000	6,000	12,000	20,000
Quantity Landfilled (lbs.)	0	0	0	0
Environmental Benefit				
Water Conserved (ga.)	113	340	679	1,132
Energy Conserved (MJ)	65	196	392	653
RCRA Hazardous Waste				
Avoided (grams)	0	0	0	0
GHG Avoided (lbs. Of CO2				
Equivalent)	22	66	132	220
CO Avoided (grams)	11	32	63	105
VOC Avoided (grams)	0	0	0	0
NO <sub>x</sub> Avoided (grams)	25	75	150	250
SO <sub>2</sub> Avoided (grams)	22	66	133	221
PM Avoided (grams)	2	5	11	18
Asphalt	1 year	3 years	6 years	10 years
Quantity Reused (lbs.)	0	0	0	0
Quantity Recycled (lbs.)	2,000	6,000	12,000	20,000
Quantity Landfilled (lbs.)	0	0	0	0
Environmental Benefit				
Water Conserved (ga.)	113	340	679	1,132
Energy Conserved (MJ)	65	196	392	653
RCRA Hazardous Waste				
Avoided (grams)	0	0	0	0
GHG Avoided (lbs. Of CO2				
Equivalent)	22	66	132	220
CO Avoided (grams)	11	32	63	105
VOC Avoided (grams)	0	0	0	0

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Total Env Benefit	1 year	3 years	6 years	10 years
Waste Reused (lbs.)	0	0	0	(
Waste Recycled (lbs.)	35,500	106,500	213,000	355,000
Waste Landfilled (lbs.)	0	0	0	(
Total Recycled or Reusec	35,500	106,500	213,000	355,000
Energy Use (MJ)	8,442	25,326	50,651	84,419
Avoided Air Emissions				
GHG Avoided (lbs. Of CO2				
Equivalent)	9,147	27,441	54,882	91,471
CO Avoided (grams)	124	372	743	1,239
VOC Avoided (grams)	53	159	318	530
NO <sub>x</sub> Avoided (grams)	802	2,405	4,811	8,018
SO <sub>2</sub> Avoided (grams)	4,541	13,622	27,244	45,406
PM Avoided (grams)	3,190	9,570	19,139	31,899
RCRA Hazardous Waste				
Avoided (grams)	0	0	0	(
Water Conserved (ga.)	321	963	1.926	3,209

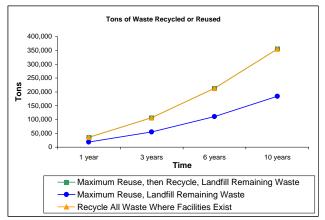
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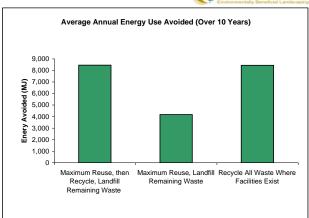
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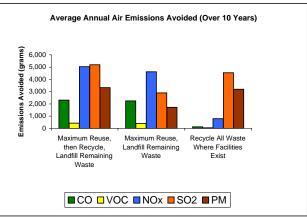
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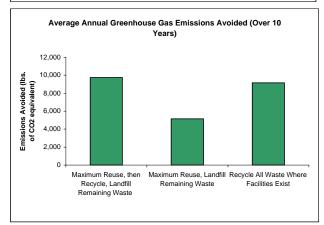
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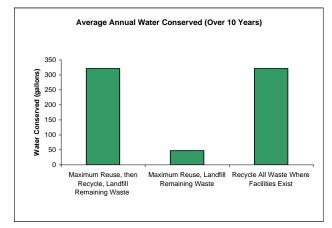


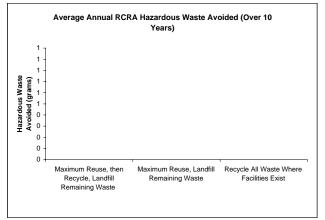












he charts below present the quant	ity of pollutants avo	olded on average, for each of the three alternat	ive scenarios and contexual measures.
laximum Reuse, then Recycle, L	andfill Remaining	Waste	Statistic
luantity Reused (lbs.) =	18,417	the muncipal solid waste 11.96 generated by	1,539.9 U.S. households per day 1,2,3
luantity Recycled (lbs.) =	17,083	the muncipal solid waste 11.96 generated by	1,428.4 U.S. households per day <sup>1, 2, 2</sup>
luantity Landfilled (lbs.) =	0	the muncipal solid waste 11.96 generated by	0.0 U.S. households per day <sup>1, 2, 2</sup>
nergy Use (MJ) =	8,455	118 the electricity used to power	71.6 U.S. households per day <sup>2</sup>
iHG Avoided (lbs. Of CO2 quivalent) =	9,738	33 the daily GHG emissions of	295.3 passenger vehicles <sup>2</sup>
O Avoided (grams) =	2,314	14.2 the CO emissions of driving	163.0 miles in the average car <sup>4</sup>
OC Avoided (grams) =	435	1.40 the VOC emissions of driving	310.8 miles in the average car <sup>4</sup>
IO <sub>s</sub> Avoided (grams) = O <sub>2</sub> Avoided (grams) =	5,037 5,188	47 the daily NOx emissions of 277,324 running an old coal plant fo	106.1 passenger vehicles <sup>5</sup> 0.02 minutes*
M Avoided (grams) =	3,323	0.75 the PM emissions of driving	4,430.7 miles in the average U.S. truc
CRA Hazardous Waste voided (grams) =	0	the amount of mercury 0.7 contained in	0.0 fever thermometers <sup>6</sup>
Vater Conserved (qa.) =	321	40 the water used by	8.0 loads of laundry <sup>8</sup>
otal Environmental Benefit II V	Vaste Avoider	Statistic	Statistic
luantity Reused (lbs.) =	18,417	the muncipal solid waste 11.96 generated by	1,539.9 U.S. households per day <sup>1,2,3</sup>
luantity Recycled (lbs.) =	0	the muncipal solid waste 11.96 generated by	0.0 U.S. households per day <sup>1, 2, 2</sup>
luantity Landfilled (lbs.) =	17,083	the muncipal solid waste 11.96 generated by	1,428.4 U.S. households per day <sup>1, 2, 3</sup>
nergy Use (MJ) = IHG Avoided (lbs. Of CO2	4,169	118 the electricity used to power	35.3 U.S. households per day <sup>2</sup>
quivalent) = O Avoided (grams) =	5,143 2,242	33 the daily GHG emissions of 14.2 the CO emissions of driving	155.9 passenger vehicles <sup>2</sup> 157.9 miles in the average car <sup>4</sup>
OC Avoided (grams) =	409	1.40 the VOC emissions of driving	291 9 miles in the average car <sup>4</sup>
O <sub>x</sub> Avoided (grams) =	4,612	47 the daily NOx emissions of 277,324 running an old coal plant fo	97.1 passenger vehicles <sup>b</sup> 0.01 minutes <sup>a</sup>
O <sub>2</sub> Avoided (grams) =	2,895		
M Avoided (grams) = CRA Hazardous Waste	1,726	0.75 the PM emissions of driving the amount of mercury	2,301.8 miles in the average U.S. tru
voided (grams) =	0	0.7 contained in	0.0 fever thermometers <sup>9</sup>
later Conserved (ga.) = ecycle All Waste Where Facilitie	47 s Exist	40 the water used by	1.2 loads of laundry <sup>8</sup>
otal Environmental Benefit (I)	Vaste Avoider	Statistic	Statistic
luantity Reused (lbs.) =	0	the muncipal solid waste 11.96 generated by	0.0 U.S. households per day 1, 2,
luantity Recycled (lbs.) =	35,500	the muncipal solid waste 11.96 generated by	2,968.2 U.S. households per day 1, 2,
luantity Landfilled (lbs.) =	0	the muncipal solid waste 11.96 generated by	0.0 U.S. households per day <sup>1, 2,</sup>
nergy Use (MJ) =	8,442	118 the electricity used to power	71.5 U.S. households per day <sup>2</sup>
iHG Avoided (lbs. Of CO2 guivalent) =	9.147	33 the daily GHG emissions of	277.4 passenger vehicles <sup>2</sup>
O Avoided (grams) =	124	14.2 the CO emissions of driving	8.7 miles in the average car <sup>4</sup>
DC Avoided (grams) = D, Avoided (grams) =	53 802	1.40 the VOC emissions of driving 47 the daily NOx emissions of	37.9 miles in the average car <sup>4</sup> 16.9 passenger vehicles <sup>a</sup>
D <sub>2</sub> Avoided (grams) =	4,541	277,324 running an old coal plant fo	0.02 minutes
M Avoided (grams) =	3,190	0.75 the PM emissions of driving	4,253.2 miles in the average U.S. tru
CRA Hazardous Waste voided (grams) =	0	the amount of mercury 0.7 contained in	0.0 fever thermometers <sup>9</sup>
Fater Conserved (ga.) =	321	40 the water used by	8.0 loads of laundry <sup>8</sup>
. Wastes: What You Can Do - Bar	ic Facts About Wa	ste. Environmental Protection Agency. http://w .epa.gov/solar/energy-resources/refs.html	ww.epa.gov/epaoswer/osw/facts.htm

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#VALUE! #VALUE!

#VALUE! #VALUE! #VALUE!

#VALUE

#### Recycling and Reusing Hardscape and Landscape Waste Default Cost Data



#### Reference this sheet if you want to re-enter default values into the Cost Data Page

Disposal Fees	Unit	Cost Estimate	Source and Comment	States
Northeast		\$77.58	Repa, Edward, Ph.D (2005) NSWMA 2005 Tip Fee Survey.	CT, ME, MA, NH, NY, RI, VT
Mid-Atlantic		\$50.92	<a href="http://wastec.isproductions.net/webmodules/webarticles/articlefiles/478-">http://wastec.isproductions.net/webmodules/webarticles/articlefiles/478-</a>	DE, MD, NJ, PA, VA, WV
South		\$34.07	Tipping%20Fee%20Bulletin%202005.pdf>	AL, FL, GA, KY, MS, NC, SC, TN
Midwest		\$38.46	If you know your own disposal cost per ton, change the green cell to the left for your	IN, IA, MI, MN, MO, OH, WI
South-Central		\$26.47	region.	AZ, AR, LA, NM, OK, TX
West-Central		\$41.51		CO, KS, MT, NE, ND, SD, UT, WY
West	\$/Ton	\$37.72		CA, HI, ID, NV, OR, WA

On-site Asphalt and Concrete				
Crushing Costs	Units	Cost Estimate	Sources	Comments
			Concrete/Asphalt Crushers. September, 2003.	
Capital Cost	N/A	\$64,350	<a href="http://p2library.nfesc.navy.mil/P2_Opportunity_Handbook/7_III_6.html">http://p2library.nfesc.navy.mil/P2_Opportunity_Handbook/7_III_6.html</a>	
			Concrete/Asphalt Crushers. September, 2003.	
Labor Cost	\$/Ton	\$7.02	<a href="http://p2library.nfesc.navy.mil/P2_Opportunity_Handbook/7_III_6.html">http://p2library.nfesc.navy.mil/P2_Opportunity_Handbook/7_III_6.html</a>	
Equipment Maintenance Cost	\$/Ton	\$0.59	Concrete/Asphalt Crushers. September, 2003.	

<b>Green Waste Grinding Costs</b>	Units	Cost Estimate	Sources	Comments
Labor cost of green waste chipping/shredding			Mulch Mule Brochure. Accessed August 28, 2007. <www.mulchmule.com info="" mulchmule2006.pdf=""></www.mulchmule.com>	This brochure says that the industry average for mulching-related labor is \$25/hour.
Time to shred/chip		0.05	Personal Communication with Customer Service, BearCat. August 29, 2007	Bear Cat estimated that a 6" chipper can chip 100 feet per minute. 100 feet was multiplied by
Maintenance of Commercial Chipper	\$/Hour Used	\$52.91		See Total Below
Initial Cost of 6" Commercial	N/A		Norwalk Power Equipment Company. Bear Cat Commercial Chippers (Gravity	The Bear Cat 71620 sells for \$7,999.
Amount Saved by Mulching	\$/CY	\$2.89	This value is calculated by subtracting the total cost of producing a CY of mulch	This is the amount saved by mulching on-site

Chipper Maintenance	Cost	Replacement Time	Cost Per	Source	Comments
					\$248 is the retail price for the blade
Blade	s \$266	10	\$26.62		replacement kit
				Customer service at Bear Cat provided estimates regarding how often	The average price of gasoline in the United
				each of these maintenance elements would be needed, as well as	States was multiplied by the volume of the
Gasolin	e \$25.08	1	\$25.08	how much it would cost to replace all the blades and bearings. This	chipper's gas tank.
				information was given on August 30, 2007.	
				The average price of gasoline, \$2.75 per gallon, was taken from the	Each bearing costs \$29 and the chipper
Bearing	s \$60	50	\$1.21	Energy Information Administration's U.S. Retail Gas Prices.	contains two bearings.
				Accessed May 23, 2008.	
				<a href="http://www.eia.doe.gov/oil_gas/petroleum/data_publications/wrgp/mo">http://www.eia.doe.gov/oil_gas/petroleum/data_publications/wrgp/mo</a>	
Tota	al N/A	N/A	\$52.91	gas_home_page.html>	

New Material Costs	Units	Cost Estimate	Sources	Comments
			Alexander, Ron, Tyler, Rod, and Goldstein, Nora. "Increasing Dollar Value for	
Compost	\$/Cu. Yard	\$17.10	Compost Products." Biocycle. Oct. 2004 <a href="http://www.environmental-">Biocycle</a> . Oct. 2004 <a href="http://www.environmental-">http://www.environmental-</a>	
				Orange County landfill sells yard waste mulch
			Earth Products. Orange County Landfill Orange County, NC. Accessed December	for \$20 per 3 cubic yards. This price was
Mulch	\$/Cu. Yard	\$7.13	29, 2006. <a href="http://www.co.orange.nc.us/recycling/earthproducts.asp">http://www.co.orange.nc.us/recycling/earthproducts.asp</a>	divided by three to find the price per cubic yard.
				The seven price estimates divided by their
			Lumber and Plywood Estimating Price Guide. Ace Hardware. January 30, 2006.	corresponding linear feet are all at or very close
Lumber (2"x 6" Decking Boards)	\$/LF	\$0.39	<a href="http://www.acehardware.net/estimate/">http://www.acehardware.net/estimate/&gt;.</a>	to \$0.36 per LF.

Brick	\$/Brick	Liu, Henry; Williams, Burkett and Haynes, Kirk. Improving Freezing and Thawing	This website states that ordinary bricks cost between \$300-\$400 per thousand. This range was averaged to \$350 per thousand or \$0.35 per brick.
Crushed Surfacing	\$/Ton	Dayton, Kevin J., State Construction Engineer, WSDOT Headquarters Construction Office. Construction Update. August 8, 2006. p. 1. <a href="http://www.wsdot.wa.gov/biz/Construction/CostIndex/CostIndexPdf/constructionupdatereport.pdf">http://www.wsdot.wa.gov/biz/Construction/CostIndex/CostIndexPdf/constructionupdatereport.pdf</a>	

Conversion Factors	From	То	Factor	Source	Comments
				Table 4. Accessed on November 4, 2006.	This value was given in pounds and converted
Brick	Bricks	Tons	0.00225	<http: docs="" ntl.bts.gov="" tables2.html="">.</http:>	to tons by dividing by 2000.
Concrete, Asphalt & Brick	Tons	Cu. Yards	0.00	http://www.buckscontainerservices.com/conversions.htm	
Concrete, Aspiralt & Brick	10115	Cu. Taius	0.63	Intp://www.buckscontainerservices.com/conversions.ntm	
				WO EDA N. 000 0	
				US EPA - Non-CO2 Gases and Carbon Sequestration - Conversion	
	0			Units. http://www.epa.gov/nonco2/units.html. Accessed October 30,	
Green House Gas	Carbon	CO <sub>2</sub>	3.6667	2007.	
				Milete Ma West Occasibility to Octobe 19 October	
				Milota, M.; West, C.; and Hartley, I. Gate-to-Gate Life-Cycle Inventory	
Oller Oll Marrial Developer Develop	Out to Mada	mbf (1000 Board		of Softwood Lumber Production. Wood and Fiber Science, December	
2"x 6" Wood Decking Boards 2"x 6" Wood Decking Boards				2005, v. 37.  Lumber Weight Calculator. Accessed November 4, 2006.	This value was derived by using a lumber
2"x 6" Wood Decking Boards		Cubic Yards			One linear foot of 2"x6" contains .0031 cubic
2 x 6 Wood Decking Boards General		MJ	3.6		One linear root of 2 x6 contains .0031 cubic
General		BTU	947.8		
General		Pounds			
General			1.1023		
General					
GHG	MTCO <sub>2</sub> E	MTCE	0.2727		
Water	Gallons	Kilograms	3.79		
				General Permit for Yard Waste Composting Facilities Under the South	
				Dakota Waste Management Program. Board of Minerals and	
				Environment. Department of Environment and Natural Resources.	
				October 13, 1998. p. 6.	
				<a href="http://www.state.sd.us/DENR/DES/WasteMgn/SWaste/COMPGEN">http://www.state.sd.us/DENR/DES/WasteMgn/SWaste/COMPGEN</a> .	This value was given in pounds and converted
Yard Waste	Cu. Yards	Tons	0.2	pdf>.	to tons by dividing by 2000.
				Wilson, C.R. and Feucht, J.R. Composting of Yard Waste. Colorado	The article states that 50-75% of plant volume
				State University Coopertive Extension. October, 1997.	is reduced by composting. This range was
Yard Waste to Compost	Cu. Yards	Cu. Yards	0.375	<a href="http://www.ext.colostate.edu/PUBS/GARDEN/07212.pdf">http://www.ext.colostate.edu/PUBS/GARDEN/07212.pdf</a> >.	averaged to derive a conversion factor.

Inflation Adjustment Table		
One Dollar in	Equals this many 2008 Dollars	
2003	\$1.17	
2004	\$1.14	
2005	\$1.10	
2006	\$1.07	
2007	\$1.04	

Source: CPI Inflation Calculator. <a href="http://data.bls.gov/cgi-bin/cpicalc.pl">http://data.bls.gov/cgi-bin/cpicalc.pl</a>